The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHUICHI WATANABE

Appeal 2007-1251
Application 09/451,097
Technology Center 2600

Decided: August 3, 2007

Before ANITA PELLMAN GROSS, JEAN R. HOMERE, and JOHN A. JEFFERY, *Administrative Patent Judges*.

GROSS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Watanabe (Appellant) appeals under 35 U.S.C. § 134 from the Examiner's Final Rejection of claims 1, 27, and 37. Claims 15 through 18 have been allowed, claims 5 through 14 and 19 through 26 have been withdrawn from consideration, and claims 2 through 4, 28 through 36, and 38 have been canceled.

Appellant's invention relates to a method of associating frame feature values with plural image frames and to the storing apparatus for storing the associated frame feature values. (See Specification 9-10.) Claims 1 and 37 are illustrative of the claimed invention, and they read as follows:

1. An image retrieval information storing apparatus for storing frame feature values in association with a plurality of frames of image data, comprising:

a calculating unit for calculating statistics of motion vector information related to said image data;

a frame feature value generating unit for generating a frame feature value which is numerical information representing quantity of a feature contained in a frame of said image data using the calculated statistics; and

a frame feature value storing unit for storing said frame feature value in correlating form with the frame of said image data, the frame feature value storing unit being connected to said frame feature value generating unit.

37. A method of associating frame feature values with a plurality of frames of image data, comprising the steps of:

calculating statistics of motion vector information related to said image data; and

generating a frame feature value comprising numerical information representing a quantity of a feature contained in a frame of said image data using the calculated statistics.

The prior art references of record relied upon by the Examiner in rejecting the appealed claims are:

Takashima	US 5,754,233	May 19, 1998
Nagasaki	US 6,400,890 B1	Jun. 04, 2002 (filed May 11, 1998)

Claims 37 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Takashima.

Claims 1 and 27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Takashima in view of Nagasaka.

We refer to the Examiner's Answer (mailed August 22, 2006) and to Appellant's Brief (filed December 15, 2005) and Reply Brief (filed October 10, 2006) for the respective arguments.

SUMMARY OF DECISION

As a consequence of our review, we will reverse both the anticipation rejection of claim 37 and also the obviousness rejection of claims 1 and 27. We also enter a new ground of rejection under 35 U.S.C. § 101 for claim 37.

OPINION

Regarding claim 37, the Examiner asserts (Answer 3) that Takashima discloses the step of calculating statistics of motion vector information, as recited in claim 37, "as provided by motion estimation circuit 103 of Figure 11, since scene changes are detected by exploiting of motion vector detection operations performed by motion estimation circuit 103, with the exploiting of motion vectors providing the calculating of statistics of motion vector information." Appellant contends (Br. 7) that Takashima does not disclose calculating statistics of motion vectors, since finding a motion vector is not the same as calculating statistics of motion vectors. Further, Appellant contends (Reply Br. 2) that "'[e]xploit' means to use to one's advantage, not to 'calculate statistics,' and Takashima in no manners suggests

calculating statistics of motion vectors." Thus, the issue for claim 37 is whether Takashima discloses calculating statistics of motion vectors.

Takashima discusses motion vectors in column 15. Specifically, Takashima discloses (col. 15, ll. 11-14) that an encoding apparatus detects scene changes "by exploiting motion vector detection operations performed by the ME [motion vector detection or motion estimator] circuit **103**." Further, Takashima states (col. 15, ll. 34-37) that "for exploiting the detected motion vector, the motion vector detected by the ME circuit **103** needs to be stored for one I-picture period." Thus, Takashima detects motion vectors, stores the detected motion vectors, and uses the detected motion vectors to detect scene changes. However, Takashima makes no mention of calculating statistics of motion vectors, and "exploiting" the detected motion vectors does not suggest calculating statistics[1] of the motion vectors.

"It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim." *In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986). *See also Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984). Since Takashima fails to disclose calculating statistics of motion vectors, Takashima cannot anticipate claim 37. Therefore, we cannot sustain the anticipation rejection of claim 37.

As to claims 1 and 27, as Takashima fails to disclose calculating statistics of motion vectors, Takashima likewise fails to disclose any

[1] We note that Appellant indicates (Specification 12:5-15) that "motion vector statistics" refers to average value of vector magnitudes, average vector, or other statistics of the motion vectors.

structure for calculating the statistics. The Examiner combines Nagasaka with Takashima but does not rely upon Nagasaka for calculating statistics of motion vectors. Furthermore, we find no disclosure in Nagasaka that would have suggested to the skilled artisan a calculating unit for calculating statistics of motion vectors. Accordingly, Nagasaka fails to cure the deficiency of Takashima, and we cannot sustain the obviousness rejection of claims 1 and 27.

Under the provisions of 37 C.F.R. § 41.50(b), we enter the following new ground of rejection against Appellant's claim 37 under 35 U.S.C. § 101 as being nonstatutory.

The Supreme Court has held that claims that, as a whole, are directed to nothing more than abstract ideas, natural phenomena, or laws of nature are not statutory under 35 U.S.C. § 101. *See Diamond v. Diehr*, 450 U.S. 175, 185, 209 USPQ 1, 7 (1981). An application of a law of nature or mathematical formula to a known structure or process, though, may be patentable. *Id.* at 187, 209 USPQ at 8. However, a process that comprises "no substantial practical application" of an abstract idea is not patentable, as such a patent would in effect be a patent on the abstract idea itself. *Gottschalk v. Benson*, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972).

Clearly, the present claim recites neither a natural phenomenon nor a law of nature, so the issue is whether it is directed to an abstract idea. We note that mathematical algorithms are considered to be abstract ideas. Thus, processes that are merely mathematical algorithms are nonstatutory under 35 U.S.C. § 101. We further note that it is generally difficult to ascertain whether a process is merely an abstract idea, particularly since claims are often drafted to include minor physical limitations such as data gathering

steps or post-solution activity. However, if a claim is considered to be an abstract idea, then the claim is not eligible for and, therefore, is excluded from patent protection.

Claim 37 recites two steps, (1) calculating statistics of motion vector information, and (2) generating a frame feature value comprising numerical information representing a quantity of a feature contained in a frame of image data using the calculated statistics. Both steps are mathematical functions, and the result is a mathematical value. Further, the claimed method includes no recitation of a computer. Thus, the method appears to be a disembodied concept. Accordingly, claim 37 merely recites a mathematical algorithm.

Nonetheless, assuming *arguendo* that claim 37 is not solely directed to an algorithm, the next question is whether the claimed invention is directed to a practical application of an abstract idea. "[W]hen a claim containing [an abstract idea] implements or applies that [idea] in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (*e.g.*, transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101." *Diehr*, 450 U.S. at 192, 209 USPQ at 10. Also, according to the test set forth in *State Street Bank & Trust Co. v. Signature Finance Group, Inc.*, 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1601 (Fed. Cir. 1998), the production of a useful, concrete, and tangible result equates to a practical application of an abstract idea.

In claim 37, we find no physical subject matter being transformed, just numerical values being manipulated. Further, though the preamble recites "[a] method of associating frame feature values with a plurality of

frames of image data," the method steps merely calculate statistics and generate a numerical value from the statistics. Thus, we find no physical subject matter being transformed.

We also find that the method of claim 37 fails to produce a useful, concrete, and tangible result. Specifically, the result of claim 37 is a numerical representation of a quantity of a feature. However, a number is neither concrete nor tangible. Thus, claim 37 is an abstract idea that is nonstatutory under 35 U.S.C. § 101.

ORDER

The decision of the Examiner rejecting claim 37 under 35 U.S.C. § 102(b) and claims 1 and 27 under 35 U.S.C. § 103 is reversed. A new ground of rejection under 35 U.S.C. § 101 is entered against claim 37.

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)). 37 C.F.R. § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the Examiner, in which event the proceeding will be remanded to the Examiner. . . .

> (2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

REVERSED
37 C.F.R. § 41.50(b)

KIS

BIRCH, STEWART, KOLASCH & BIRCH, L.L.P.
P. O. BOX 747
FALLS CHURCH, VA 22040-0747